UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/460,174	12/10/1999	WALTER WESLEY HOWE	99-006	2106

32127 7590 09/11/2002

VERIZON CORPORATE SERVICES GROUP INC.
C/O CHRISTIAN R. ANDERSON
600 HIDDEN RIDGE DRIVE
MAILCODE HQE03H01
IRVING, TX 75038

EXAMINER	
LELE, TANMAY S	

ART UNIT	PAPER NUMBER
2681	

DATE MAILED: 09/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PRA

Office Action Summary	Application No.	Applicant(s)
	09/460,174	HOWE, WALTER WESLEY
	Examiner	Art Unit
	Tanmay S Lele	2681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *14 August 2002* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Arguments

1. Applicant's arguments filed 14 August 2002 have been fully considered but they are not persuasive.

2. Regarding claims 1, 5 – 7, 10 – 12, 14, and 16. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In this case, the Applicant attempts to overcome the combination of the Sawyer and Mirashrafi references by suggesting that, "neither in the prior art of Sawyer nor Mirashrafi disclose a communications system that incorporates three entirely different types of communications networks (wireless or mobile, a PSTN and an a alternate non-public switched network or Internet-based protocol network). Applicant further states that, "Sawyer discloses a system for routing wireless communications traffic over a PSTN while Mirashrafi discloses a system allowing people to initiate calls on the Internet destined for phones on a PSTN," and this there was no need and thus no motivation to attempt to combine theses two references during conception of the invention."

Mirashrafi does make reference to the use of all three networks, as seen in Figure 1 and detailed in column 7, lines 12 – 15, specifically line 15 where Mirashrafi states, "wireless handset, " and once again with reference to Figure 1 (as detailed starting column 5, line 60 and

ending column 6, line 2). With this inclusion, it becomes inherent that either the "PSTN" block must contain all the associate hardware for the noted wireless handset to function (ie BTS, BSC, MSC, HLR, VLR, PSTN, ect) or that the connection 144 contains all the associated equipment listed above (as detailed starting column 5, line 60 and ending column 6, line 2, wherein "connection 144 maybe a wireless cellular connection"). As further proof of this, Mirashrafi further refers to a number of elements (column 6, lines 3 – 5) that are not shown in the PSTN cloud, thus supporting the idea that not all elements are shown, but understood to be present for the system to work properly as known to those skilled in the art. Furthermore, though Sawyer does not make reference to the use of an alternate network for call routing, reference is made to the use of a wireless network and PSTN. Combining the two references for purposes of a toll free or reduced call could easily be ascertained. Thus, Examiner is not persuaded by the Applicant's argument that he references have not been properly combined.

3. Regarding claims 1, 5 – 7, 10 – 12, 14, and 16. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., for instance, according to one embodiment of the present invention, as illustrated in Figure 2, a server 49 for the alternate non-public switched network 45 is connected, by means of a signal transfer point (STP) 55, to the home location register (HLR) 53 of a wireless network. The HLR queries various components on the wireless network and determines the location of a mobile data unit 51, which it then sends back to server 49. With this information, the alternate network 45 can determine which of its data units 70 is closest to the hardwired telephone network or PSTN that services that region of the wireless network. The data is then distributed through data unit 70 onto the PSTN 72, which then delivers the data through

the wireless network to the mobile data unit 51) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, with the combination of Sawyer and Mirashrafi, the addition of the associated components to make the system work with a wireless handset become inherent, and thus the combination of the references would indeed disclose a system with all the components as claimed. Therefore, the Examiner is not persuaded by the Applicant's arguments suggesting that the references, when combined, failed to show all claimed limitations.

4. Regarding claims 1, 5 – 7, 10 – 12, 14, and 16. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., specifically, in the second paragraph on page 2, it is revealed that in the present state of the art, a home location register (HLR) 23 is associated with a switching center 19 where the mobile unit phone number "resides. " The HLR interacts with the switching center, which is a switch used for call control and processing. The switch also serves as a point-of access to the PSTN. This is a standard in the art. However, as then emphasized in the first full paragraph on page 3, due to the unique way that the claimed invention integrates an alternate non-public switched network with a wireless network, the "HLR used by this invention has no associated switching matrix." As a result of this, "all mobile stations are always in a roaming state.") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, with the combination of Sawyer and Mirashrafi, the addition of the associated components to make the system work with a wireless handset become inherent, and thus the combination of the references would indeed disclose a system with all the components as claimed. Therefore, the Examiner is not persuaded by the Applicant's arguments suggesting that the references, when combined, failed to show all claimed limitations.

5. Regarding claims 2 and 8. In response to applicant's argument that the Alperovich reference is not properly combinable with the other references made of record by the Examiner, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Applicant attempts to overcome the use of the Alperovich reference by suggesting, "Alperovich does not disclose or suggest that the three different type of communication networks, specifically a wireless network, PSTN, and a non-PSTN can be integrated to optimize communications between a wires and mobile data unit."

The Alperovich reference though, was relied upon to provide a teaching regarding the process of optimal wireless call routing and the associated hardware, as discussed in the previous Office Action. Since Applicant's invention pertains to a wireless system and call/data processing via an optimized path and applicant claims locating means here the identity of the last VLR is stored, Alperovich's teachings of optimal wireless call routing and the associated process are relevant and pertinent. Alperovich teaches of communications networks utilizing a wireless

network and PSTN network, and hence the combination with Sawyer (also a wireless and PSTN network) and Mirashrafi (a wireless network, a PSTN network, and an alternate PSTN network) becomes possible, as all three references share the common wireless and PSTN and all teach of optimal path for call completion. Thus, the Examiner is not persuaded by the Applicant's arguments that the Alperovich reference cannot be properly combined with the other references made of reference by the Examiner.

6. Regarding claims 3, 4, 9, 12, and 15. In response to applicant's argument that the Hasan reference is not properly combinable with the other references made of record by the Examiner, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In this case the Applicant states attempts to overcome the Hasan reference (note the combination of Sawyer and Mirashrafi have already been addressed above) by suggesting that, "Hasan simply discloses a traditional wireless network that reserves a small quantity of telephone numbers and temporarily assigns these numbers to roaming wireless subscribers when they make a call. Hasan does not disclose or suggest the integration of a PSTN and an alternate PSTN with a wireless networking system let alone how this might be specifically accomplished."

The Hasan reference however was relied upon to provide a teaching regarding the accommodation of calls to and from remote or roaming subscribers (with a limited pool of temporary numbers), as discussed in the previous Office Action. Since Applicant's invention

pertains to a wireless system and call/data processing via an optimized path and since the claims set forth the limitation of assigning a temporary local directory number, it would appear that Hasan's teachings of the assignment of temporary local directory numbers based on location, are relevant and pertinent to the present application. Hence, the Examiner is not persuaded by the Applicant's arguments suggesting that the Hasan reference cannot be properly combined with the other references made record of by the Examiner.

DETAILED ACTION

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 17, 20, and 24 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding newly added claims 17, 20, and 24, the concept of, " a home location register that is addressable by said server, *but is not associated with a home mobile switch.*" Neither the specification nor figures disclose a "home mobile switch." Figure 1 (prior art) does disclose a home mobile switch, directly associated with the HLR. Further, if it is to be assumed that the "serving switch" (63) is the "home mobile switch" then the two are still associated via the VLR and STP as seen in Figure 2. For purposes of examining, it was assumed that the HLR and home mobile switch must be associated in some manner, either directly or indirectly via intermediate connection and or hardware.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 5, 6, 7, 10, 11, 12, 14, and 16 - 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawyer (U.S Patent No. 5,978,677) in view of Mirashrafi et. al (U.S. Patent No. 5,889,774).

Regarding claim 1, Sawyer teaches of a communication system that provides a path between two mobile units, means for locating a serving switch last in contact with the mobile unit, means for assigning a temporary local directory number to a serving switch, and shows the means of communication between the two mobile units (from columns 1 - 2, lines 45 – 4, respectively). Sawyer does not explicitly show the use of a hard wired data unit being connected to an alternate non-public switched telephone network and to the public switch telephone network at a location local to the serving switch and dialing temporary local directory number to activate a connection with the serving switch. In an analogous art, Mirashrafi et. al teach the use of a hard wired data unit being connected to an alternate non-public switched telephone network and to the public switch telephone network. Mirashrafi et. al, describe "internet based voice communications with a telephone motif..." and further states, "the internet provides the 'switching' architecture for the system, while the computer works as the 'handset,' or audio interface," (column 1, lines 31 – 36). Mirashrafi et. al further indicate the internet being, "free of toll charges," (column 1 line 40) and discusses that " the prior art approach of finding the

internet telephony closest to the destination address may offer the simplest technical solution and seemingly the cheaper connection..." (column 3 lines 31–35). Mirashrafi et. al also state, " ...the primary server somehow determines which server in a community of similarly enabled servers (i.e. servers with the hardware/software necessary to provide access to the PSTN) is closest to the destination address and completes the telephone call by routing the telephone call through a number of intermediate servers on the internet to the selected server..." (column 3 lines 4 –15). In light of Mirashrafi et. al's discussion stated above (internet telephony, no charge, server control of communication path, ect), it would have been obvious to a person skilled in the art, at the time of invention, to modify Sawyer's model to achieve the described invention. By placing Mirashrafi et. al into Sawyer, the same function of "local" communication through an "alternate non-PSTN" connecting a "hard wired unit" to a "mobile data unit" would have been achieved (and thus alleviating all long distance tolls). Mirashrafi et. al show a plurality of devices connected to the PSTN in figure 1 (handsets, bridgeports or internet/PSTN change over servers) which further describes the claimed when viewed with Sawyer.

Regarding claim 5, Sawyer teaches all of the claimed limitations as recited in claim 1 above. Sawyer does not teach of a communicating means that includes a server for controlling communication through the alternate network. Mirashrafi et. al make direct reference to " the primary server, which somehow, determines which server in a community of similarly enabled servers is closest to the destination address and completes the telephone call through a number of intermediate servers on the internet to the selected server" (column 3, lines 6 -12) .

Regarding claim 6, Sawyer teaches all of the limitations as recited in claims 1 and 5 above. Sawyer does not teach that the alternate network is based in the Internet protocol.

Mirashrafi et. al make direct reference to the process occurring on the internet (column 3 line 52, as one example) and "internet telephony" (column 3 line 51, as one example).

Regarding claim 7, Sawyer teaches all the limitations of claims 1 and 5 above. Sawyer does not teach of a server operating through the alternate network which selects a local communication path to the serving switch. Mirashrafi et. al further teache that "the prior art approach of simply finding the internet telephony enabled server closest to the destination address..." (column 3, lines 31-33). Mirashrafi et. al latter describe a "bridgeport," which is an "internet/PSTN changeover server to place the voice call to the PSTN extension and facilitate the voice call..." (column 5, lines 13-17). It would have been obvious to one skilled in the art that two statements describe a system that determines a local server (aka bridgeport) that thus interfaces with a local PSTN to complete the connection.

Regarding claim 10. Claim 10 includes all the limitations of claim 1. Claim 1 explains a more generic system (communication system) than that in claim 10 (a telephone system). Sawyer teaches of a mobile telephone system, comprising of two wireless units, a home location register, a visited location register in selective communication with the home location register and including a database showing that the visited location register was last in communication with a wireless unit, the visited location register establishing a temporary local directory number and forwarding this temporary local directory number to the home location register for delivery to a switch. Sawyer does not teach of an alternate non-public switch telephone network controlled by at least one server, nor make reference to a "telephone system." Mirashrafi et al teach of an alternate non-public switch telephone network controlled by at least one server. This claim is therefore rejected for the same reasons in claims 1, 5, 6, and 7.

Regarding claim 11, Sawyer teaches all of the limitations as recited in claim 10 above. Sawyer does not teach that the alternate network is an Internet protocol based network. Mirashrafi et. al make direct reference to the process occurring on the internet (column 3 line 52, as one example) and "internet telephony" (column 3 line 51, as one example). It would have been obvious to one skilled in the art that the internet would be an "Internet protocol based network."

Regarding claim 12, Sawyer and Mirashrafi et. al teach all of the claimed limitations as disclosed in claim 10. Sawyer teaches of a mobile telephone system. Sawyer does not detail about the alternate network which includes a pool of hard-wired data units, were the hard-wired data units are dispersed at geographically remote locations with the server selecting one of the hard-wired data units using the temporary local directory number. Mirashrafi et. al teach that the process occurs on the internet (column 3 line 52, as one example) and "internet telephony" (column 3 line 51, as one example) and how "the primary server, which somehow, determines which server in a community of similarly enabled servers is closest to the destination address and completes the telephone call through a number of intermediate servers on the internet to the selected server" (column 3, lines 6 -12). It would have been obvious to one skilled in the art at the time of invention that the hard wire units must be dispersed geographically, as the alternate network (internet protocol based) is large and thus has access points spread out (as modems accessing the Internet are widely spaced geographically).

Regarding claim 14, Sawyer teaches of a mobile telephone system for communicating between a two mobile using the temporary local directory number to establish communication with the wireless unit. Sawyer does not teach of communicating between a hard-wired data unit

and a mobile data unit including a server connected to and controlling an Internet based protocol network for determining the temporary local directory number of a last serving switch in contact with the mobile unit, nor about establishing communication with the wireless unit through use of Internet based protocol network. Mirashrafi et. al teach of communicating between a hard-wired data unit and a mobile data unit including a server connected to and controlling an Internet based protocol network for determining the temporary local directory number of a last serving switch in contact with the mobile unit, about establishing communication with the wireless unit through use of Internet based protocol network, as detailed in the rejections for claims 1,5,6,7,10 and 11.

In reference to claim 16, Sawyer in view of Mirashrafi, have fully described this method of providing an optimum connector path between a hard-wired data unit and a mobile data unit comprising the steps of locating a serving switch last in contact with the mobile data unit, assigning a temporary local directory number to the serving switch, and communicating with the mobile data unit including the sub-steps of connecting the hard-wired data unit to an alternate non-public switched telephone network and to the public switch telephone network at a location local to the serving switch, dialing the temporary local directory number, and activating a connection with the serving switch, as detailed in claims 1,5,6,7,10, and 11.

Regarding claim 17, Sawyer in view of Mirashrafi teach all the claimed limitations as recited in 10. Sawyer further teaches that said home location register is associated with a home mobile switch (column 3, lines 17 – 20).

Regarding claim 18, Sawyer in view of Mirashrafi teach all the claimed limitations as recited in claim 17. Sawyer further teaches that the wireless data unit operates only in a roaming state (starting column 6, line 55 and ending column 7, line 35).

Regarding claim 19, Sawyer teaches of a communication system that provides an optimum connector path between wireless data units, comprising a public switched telephone network (column 3, lines 60-65); a wireless communication network for communicating with said wireless data unit, comprising a home location register (seen in Figures 1 – 8), a visited location register in selective communication with said home location register, said home location register including a database showing that said visited location register was last in communication with said wireless data unit (column 3, lines 18 – 23; column 4, lines 11 - 18), and a temporary local directory number for said serving switch is established by said visited location register, said temporary local directory number being forwarded to said home location register (column 4, lines 19 – 28).

Sawyer does not teach of a serving switch in communication with said wireless data unit, said server of said alternate non-public switch telephone network or at least one hard-wired data unit on said alternate non-public switch telephone network is also in communication with said public switch telephone network, and wherein said at least one hard-wired data unit uses said temporary local directory number to call said serving switch to establish communication with said wireless data unit.

In a related art dealing with toll free call complete via an alternate path using a wireless or cellular system, Mirashrafi teaches of an alternate non-public switch telephone network controlled by at least one server and containing at least one hard-wired data unit (seen in Figure 1 and detailed in column 5, lines 4 – 8), said server of said alternate non-public switch telephone network or at least one hard-wired data unit on said alternate non-public switch telephone network is also in communication with said public switch telephone network (as seen in Figure

1, and detailed in column 5, lines 7 – 50) and wherein said at least one hard-wired data unit uses a number to call said serving switch to establish communication with said wireless data unit (column 8, lines 40 – 58).

It would have been obvious at the time of invention to have used in Sawyer's system of efficiently performing call routing and termination, Mirashrafi's system of using an alternate non PSTN network to complete a call using a cellular wireless handset, for the purposes of completing a telephone with no or reduced toll charges, as taught by Mirashrafi.

Regarding claim 20, Sawyer in view of Mirashrafi teach all the claimed limitations as recited in claim 19. Sawyer further teaches that said home location register is associated with a home mobile switch (column 3, lines 17 – 20).

Regarding claim 21, Sawyer in view of Mirashrafi teach all the claimed limitations as recited in claim 19. Mirashrafi further teaches that the alternate non-public switch telephone network is an Internet protocol based network (as seen in Figure 1 and detailed in column 5, lines 3 – 12).

Regarding claims 22, Sawyer in view of Mirashrafi teaches all the claimed limitations as recited in claim 19. Mirashrafi further teaches that the alternate non-public switch telephone network includes a pool of hard-wired data units, said hard-wired data units dispersed at geographically remote locations (as seen in Figure 1, and detailed specifically in column 7, 28 – 31) with said server selecting one of said hard-wired data units (column 5, lines 4 – 10) using said temporary local directory number (column 8, lines 44 – 48; note that with the combination of Sawyer, the number becomes the temporary local directory number).

5. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawyer U.S Patent No. 5,978,677, in view of Mirashrafi et. al U.S. Patent No. 5,889,774 and in further view of Alperovich U.S. Patent No. 5,991,621.

In regards to claim 2, Sawyer and Mirashrafi et. al teach all of the claimed limitations as disclosed in claim 1. Sawyer and Mirashrafi do not explicitly refer to the visited location register. Alperovich further elaborates the routing process and better defines apparatus and methodology (column 1, lines 41-47). It would have been obvious to persons skilled in the art at the time of invention, that Alperovich was indeed describing a visited location register (VLR), by definition and therefore could easily have been inserted into Sawyer and Mirashrafi. Those skilled in the art with knowledge on the routing of calls outside the normal service area know that a visited location register is necessary and accessed when a user is "roaming" outside their normal area of coverage.

Regarding claim 8, Sawyer and Mirashrafi et. al teach all of the claimed limitations as disclosed in claim 1. Sawyer and Mirashrafi do not teach that the serving switch is local to the mobile data unit so that all calls made through the serving switch will be local calls. Alperovich further explains that, "the network (will) reroute incoming calls to the appropriate mobile switching center (MSC) serving the roaming mobile subscriber, " (column 1, lines 45-47) and further gives an example of the procedure in a subsequent paragraph (column 1 lines 53 – 66), which describe what was being claimed.

6. Claims 3, 4, 9, 13, 15, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawyer U.S Patent No. 5,978,677, in view of Mirashrafi et. al U.S. Patent No. 5,889,774 and in further view of Hasan U.S. Patent No. 5,724,658.

Regarding claim 3, Sawyer and Mirashrafi et. al teach all of the claimed limitations as disclosed in claim 1. Sawyer and Mirashrafi et. al do not teach of assigning the temporary local directory number based on the geographic location of the serving switch.. Hasan adds the concept of assigning the temporary local directory number based on the geographic location of the serving switch (column 1, lines 39-44). It would be obvious to those skilled in the art at the time of invention that Hasan's concept of location could be added to Sawyer and Mirashrafi's combination and was even inherent. Those skilled in the art realize that a roaming subscriber receives a temporary number local to the area they are currently roaming within and that the local switching station governs what numbers are local.

Regarding claim 4, Sawyer and Mirashrafi et. al teach all of the claimed limitations as disclosed in claims 1 and 3. Sawyer fails to teach of how the temporary local directory number is used to select the hard-wired data unit from a pool of geographically disposed hard-wired data units by comparing characteristics of the temporary local directory number with characteristics of each phone number associated with each hard-wired data unit on the public switch telephone network. Mirashrafi et al describe "internet based voice communications with a telephone motif..." and further teaches that, "In response, page Bridgeport determines a destination PSTN extension for the requested call. In one embodiment, the determination is based on the attributes of the client computer, e.g zip code or the telephone area code/prefix associated with the client computer." (column 8, lines 40 – 42 and 44 – 47). Mirashrafi et al. fail to teach of reserving a temporary local number. Hasan, has described the process of reserving and assigning temporary local directory numbers (column1 lines 39-44). It would have been obvious to a person skilled in the art that this procedure was describing which device to communicate with, based on

comparing the requested "page" (call number) versus the client's telephone number and moreover that the "client's" number would have to have been a temporary local directory number as it is not of its original geographic location.

In reference to claim 9, Sawyer and Mirashrafi et. al teach all of the claimed limitations as disclosed in claim 1. Sawyer and Mirashrafi et. al do not specify of assigning temporary local directory number by selecting from a pool of numbers whose geographic base is local to the serving switch. Hasan further teaches that local exchange carriers are, "reserving and assigning a block of Washington (local in this case) telephone numbers to each wireless telephone service carriers in the Washington area, so that each remote wireless carrier could temporarily assign one of its reserved numbers to a roaming subscriber visiting the Washington (local) area." (column 1 lines 39 – 44), which describe the claimed.

Regarding claim 13, Sawyer and Mirashrafi et. al teach all of the claimed limitations as disclosed in claim 10 and 12. Sawyer, in view of Mirashrafi et. al and Hasan, have fully treated the claim of a telephone system where the server compares a temporary local directory number with a phone number assigned to each of the hardwired data units on a public switch telephone network to determine the hard-wired data unit closest to the serving switch so as to establish a local call over the public switch telephone network in the prior rejections 1, 7, and 10-12.

Regarding claim 15, Sawyer and Mirashrafi et. al teach all of the claimed limitations as disclosed in claim 14. Sawyer and Mirashrafi et fail to teach that the temporary local directory number can be a callable telephone number. Hasan has described (column 1, lines 39-44) that the temporary local directory number is callable which is what is being claimed.

Regarding claim 23, Sawyer in view of Mirashrafi teach all the claimed limitations as recited in claim 22. Sawyer in view of Mirashrafi further teach that the server compares said temporary local directory number with a phone number assigned to each of said hard-wired data units on said public switch telephone network to determine said hard-wired data unit closest to said serving switch.

Sawyer in view of Mirashrafi do not implicitly teach to establish a local call over the public switch telephone network (though it should be noted that the point out that the point of using the Internet is to reduce or eliminate the toll cost of the call).

In a related art, dealing with call routing in wireless roamers, Hasan teaches of establish a local call over the public switch telephone network (column 2, lines 15 – 25).

It would have been obvious to one skilled in the art at the time of invention to have included into the combined system of Sawyer and Mirashrafi, Hasan's system of assigning local numbers based on geographic location for the purposes of efficiently routing calls, as taught by Hasan.

7. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirashrafi et al. (Mirashrafi, US Patent 5,889,774) in view of Sawyer (Sawyer, US Patent 5,978,677).

Regarding claim 24, Mirashrafi teaches of a method of communicating between a hard-wired data unit and a wireless data unit comprising the steps of

initiating a call to said wireless data unit while upon an alternate non-public switch telephone network controlled by at least one server (as seen in Figure 1 and detailed from 57 – 62);

establishing communication between said alternate non-public switch telephone network and a wireless network, (starting column 5, lines 60 ending column 6, line 2), selecting said hard-wired data unit from a pool of geographically disposed hard-wired data units by comparing characteristics of telephone number with characteristics of each phone number associated with each said hardwired data unit, said number being relayed from wireless network to said server of said alternate non-public switch telephone network (column 8, lines 40 – 50), establishing communication from said hard-wired data unit on said alternate non-public switch telephone network, through said public switched telephone network, to said wireless data unit on said wireless network (column 5, lines 3 - 32).

Mirashrafi does not teach of said wireless network including a home location register addressable by said server but not associated with a home mobile switch and retrieving a temporary local directory number assigned to said wireless data unit by said wireless network.

In a related art dealing with efficiently terminating call routing, Sawyer teaches of said wireless network including a home location register addressable by said server but not associated with a home mobile switch (column 3, lines 17 – 20), retrieving a temporary local directory number assigned to said wireless data unit by said wireless network (column 4, 19 – 28).

It would have been obvious to have included into Mirashrafi's method of call completion using a non-PSTN network and wireless network, the methods of call routing as described by Sawyer, for the purpose of efficient call routing in the wireless network, as taught by Sawyer.

Regarding claim 25, Mirashrafi in view of Sawyer teach all the claimed limitations as recited in claim 24. Mirashrafi further teaches that the alternate non public switch telephone

network is based on the Internet protocol (as seen in Figure 1 and detailed in column 5, lines 3 – 12).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanmay S Lele whose telephone number is (703) 305-3462. The examiner can normally be reached on 8:30 – 6, Monday – Thursday and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on (703) 305-4778. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

TSL
Tanmay Lele
Examiner
Art Unit 2681

tsl
August 29, 2002

NAY MAUNG
PRIMARY EXAMINER